



ENERGY POLICY UPDATE

JANUARY 21, 2014

The Energy Policy Update electronic newsletter is published by the Arizona Governor's Office of Energy Policy and is provided free of charge to the public. It contains verbatim excerpts from international, domestic energy, and environment-related publications that are reviewed by community outreach personnel. For inquiries, call 602-771-1143 or toll free to 800-352-5499. To register to receive this newsletter electronically or to unsubscribe, email [Gloria Castro](#).

UPCOMING WEBINARS

Energy Efficiency in Correctional Facilities & Opportunities for State Energy Office Engagement

Thursday, January 23

2:00 p.m. to 3:30 PM EST

[Register to attend the webinar.](#)










DOE Tribal Renewable Energy Series Webinar: Strategic Energy Planning

Wednesday, February 26

11:00 AM - 12:30 PM MST

[Register to attend the webinar.](#)

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The Arizona Republic now has limited access. As such, links may or may not work.

ARIZONA-RELATED

[ASU among Schools in New \\$140M Manufacturing Consortium](#)

[Phoenix Business Journal, Jan. 15] President Barack Obama was in Raleigh, N.C. today to announce a \$140 million manufacturing consortium among 18 companies, five universities — including Arizona State University — and a lab. The Next Generation Power Electronics Institute will be headquartered at N.C. State University, but ASU will play a big role.

[Department of Defense Grant to Create New Tech Transfer Center at ASU](#)

[ASU News, Jan. 13] Arizona State University has been awarded a \$1 million grant from the U.S. Department of Defense to create a new Pracademic Center of Excellence in Technology Transfer to leverage ASU's proven method and record of success to support technology transfer and commercialization from Department of Defense laboratories. The center is a collaboration led by ASU's Entrepreneurship and Innovation Group, in association with Arizona Technology Enterprises (AzTE), ASU's Security and Defense Systems Initiative and ASU's W. P. Carey School of Business. Technology transfer from federal government laboratories, especially for Department of Defense laboratories, has become an increasingly important strategic objective. The new Pracademic Center of Excellence in Technology Transfer (PACE/T2) will play an important role in meeting the department's strategy, plans, goals and metrics for substantially increasing transfer and commercialization of dual-use technologies developed in defense laboratories to the commercial marketplace.

[New Phoenix Buses Offer Different Fuel, Lots of Gadgets](#)

[Phoenix Business Journal, Jan. 17] Phoenix transit riders have fancy new buses to watch the miles go by since the Phoenix Public Transit Department secured 120 new heavy-duty vehicles with quieter engines, smoother rides and better air conditioning. The buses run on compressed natural gas, making them more energy-efficient and cost-effective than the older buses that run on diesel and liquefied natural gas. The \$61 million purchase was covered 83 percent with federal funds and 17 percent from the Maricopa County regional transportation fund.

[EPA Awards \\$200K in Grants for Ambos Nogales Projects](#)

[Nogales International, Jan. 17] The U.S. Environmental Protection Agency has awarded more than \$200,000 to fund four projects in the Ambos Nogales area meant to expand an oil recycling program, track air pollution, and keep industrial pollutants out of the Nogales International Wastewater Treatment Plant. The awards are part of a package of seven grants totaling \$461,368 that the EPA authorized for environmental projects along the U.S.-Mexico border in California and Arizona. The funds were awarded in partnership with the Border Environment Cooperation Commission, under the bi-national U.S.-Mexico Environmental Program: Border 2020. The federal funds will be matched by an additional \$354,746 in funding from the recipient organizations, the EPA said.

[Proposed Arizona Tax Breaks Teed Up for Apple, Other Big Businesses](#)

[Phoenix Business Journal, Jan. 15] Arizona Gov. Jan Brewer proposed new energy tax breaks at her State of the State speech Monday that could aid Apple Inc.'s new production plant in Mesa, plus other large manufacturers. But there could also be a push for new equipment and machinery tax cuts that could also benefit Apple, Intel Corp. and other companies who are in special tax zones where they already pay a reduced 5 percent rate on their real estate. The equipment and machinery tax proposal could entail allowing businesses paying the lower real estate property taxes to also accelerate their depreciation write-offs. That could help equipment-intensive industries and the likes of Apple. However, that proposal could run into some opposition from small-business advocates worried about state tax cuts being geared too much toward big companies. Most businesses in the state pay a 19.5 percent real estate property tax rate, designated as Class 1 in the state tax code.

[Wind Farm Could Endanger Birding Paradise, Some Fear](#)

[Arizona Daily Star, Jan. 19] A planned \$100 million wind-energy farm west of Willcox could be lethal to birds in an area famous for its annual birding festival, critics say. Proponents of renewable energy are lauding the project, which will have about 30 giant wind turbines on 200 acres. The towers will be about 460 feet high. "I'm not a fan. I'd rather not have the wind farm there," said Homer Hansen, chairman of the Wings Over Willcox Birding and Nature festival, which concludes today. During the festival, participants spot a wide variety of birds including spectacular sandhill cranes.

ALTERNATIVE ENERGY AND EFFICIENCY

[Armed Forces See Rise in Renewable Energy](#)

[Los Angeles Times, Jan. 16] The use of clean energy technology has seen a sharp rise in military sites in the U.S., as the armed forces push into green sources of power around the country, a report said. [The Army](#), Navy, Air Force and Marine Corps. have looked for ways to reduce its energy bills in recent years even as the [Pentagon's](#) budget is squeezed. Combined, the [U.S. military](#) goes through \$4 billion worth of power on its bases, according to a report from Pew Charitable Trusts. The armed forces have moved to quickly adopt green energy solutions, the report said. Renewable-energy projects at military installations run by the Defense Department jumped 54% to 700 from 2010 to 2012, the report said. Energy-saving and efficiency projects more than doubled to 1,339 from 630 during that time.

[Boeing Research Reveals Green Diesel's High Potential to Fuel Jets](#)

US aircraft maker seeks approval to fly an aircraft using green diesel, which could pave the way for commercial use in the near future

[Eco-Business, Jan. 16] Boeing researchers have found that 'green diesel', a renewable fuel used in ground transportation, could be a significant new source of sustainable jet fuels. Analysis by their researchers showed that green diesel, which is made from oils and fats, are chemically similar to today's aviation biofuel, and could be blended directly with traditional jet fuel, said Boeing in a statement on Tuesday. Green diesel, also known as a 'renewable diesel' is processed differently and is a different product than fuels

called 'biodiesels'. Industry expert Solazyme distinguishes renewable diesel as "hydrocracked and refined, and is nearly molecularly indistinguishable from standard diesel that comes out of the pump". Biodiesel, on the other hand, is defined as methyl and ethyl esters of fatty acids. Biodiesel is also referred to as FAME (fatty acid methyl ester) in the United States, or, in Europe, as RME (rape seed methyl ester), according to US National Renewable Energy Laboratory. The company is seeking approval from the US Federal Aviation Administration to fly an aircraft on green diesel, but did not mention if it intends to run it entirely using the alternative fuel. Green diesel emits at least 50 per cent less carbon dioxide than fossil fuel over its lifecycle, it said.

[Peer Comparisons Work, People Increase Energy Efficiency](#)

[SustainableBusiness.com, Jan. 20] How do you encourage people to become more energy efficient or put solar on their roof? Behavioral scientists have been saying for years that one of the most effective ways is to compare people with their peers. This is the first time we've seen this concept put into action: the utility, Hawaii Energy, is mailing reports to customers that show how their electricity consumption compares to neighbors. 57,500 Oahu residents will receive reports that show their electricity use and how that compares with 100 anonymous nearby homes that have similar characteristics, such as age, square footage and number of bedrooms. Residents will receive customized energy-saving tips and three follow-up monthly reports to help them track their progress. Started as a pilot program in 2011, the Home Energy Report is now sent to homes across the islands. It has so far saved \$2.94 million on electric bills for 75,000 households (7.54 million kilowatt hours). [Hawaii's](#) goal is to cut energy demand by 30% and increase renewables to 40% of the mix by 2030. In terms of [solar per capita, the state ranks #3](#) in the nation. In an analysis of whether the US is gaining ground on energy efficiency, the "decreased energy intensity of homes" is one of the success stories, says the American Council for an Energy Efficient Economy (ACEEE).

[Solar Energy Firms Are Getting Creative in Raising Funds](#)

SolarCity plans to offer securities backed by solar projects and contracts with customers. Other companies are giving crowdfunding a try.

[Los Angeles Times, Jan. 16] Solar installer SolarCity Corp. has figured out a way to tap retail investors willing to earn green by going green. The San Mateo company on Wednesday said it plans to offer a way to buy investment products similar to bonds. Instead of being backed by SolarCity, these securities would offer returns backed by solar projects and contracts the company has with customers who have panels installed on their roof. This is just one in a number of novel ways that solar power companies, many just start-ups, are finding ways to finance their businesses. Solar developers often have a difficult time persuading traditional banks to fund smaller-scale projects, analysts said. Many investment firms are unfamiliar with the risks of solar and unwilling to wait out the payout period, which can take decades.

[Toyota Pledges to Top U.S. Push to Double Fuel Economy by 2025](#)

[Bloomberg, Jan. 15] Toyota Motor Corp. (7203), the world's biggest seller of hybrid-electric vehicles, vowed to surpass U.S. rules intended to double fuel economy and reduce carbon emissions. Automakers agreed in 2011 to a plan by President Barack Obama targeting an industrywide increase in Corporate Average Fuel Economy, or CAFE, to 54.5 miles per gallon of gasoline by 2025. Increased sales of hybrids and other alternative-powered autos will help Toyota comply with that rule, said Bob Carter, the automaker's U.S. senior vice president. "The 2015 to 2025 CAFE regulations will require automakers to significantly reduce emissions and increase fuel economy across their fleet of vehicles," Carter said in prepared remarks at Deutsche Bank AG's auto industry conference in Detroit yesterday. "That won't be easy, but at Toyota we plan to exceed these new standards." The U.S. efficiency push has brought dozens of new hybrids, plug-in cars, electric vehicles and models powered by fuel-saving gasoline engines to the market in the past three years.

ENERGY/GENERAL

[China Pollution Wafting Across Pacific To Blanket U.S.: Study](#)

[Reuters, Jan. 20] BEIJING (Reuters) - Pollution from China travels in large quantities across the Pacific Ocean to the United States, a new study has found, making environmental and health problems unexpected side effects of U.S. demand for cheap China-manufactured goods. On some days, acid rain-inducing sulphate from burning of fossil fuels in China can account for as much as a quarter of sulphate pollution in the western United States, a team of Chinese and American researchers said in the report published by the U.S. National Academy of Sciences, a non-profit society of scholars. Cities like Los Angeles received at least an extra day of smog a year from nitrogen oxide and carbon monoxide from China's export-dependent factories, it said. "We've outsourced our manufacturing and much of our pollution, but some of it is blowing back across the Pacific to haunt us," co-author Steve Davis, a scientist at University of California Irvine, said. Between 17 and 36 percent of various air pollutants in China in 2006 were related to the production of goods for export, according to the report, and a fifth of that specifically tied to U.S.-China trade. One third of China's greenhouse gases is now from export-based industries, according to Worldwatch Institute, a U.S.-based environmental research group.

[Energy Boom's Impact on National Security](#)

[CNNMoney, Jan. 15] NEW YORK – The U.S. energy boom could have far reaching effects on the world stage, according to a new report. Acknowledging that the boom is creating jobs and decreasing the need for oil imports, the boom could also lead to increasing instability in some U.S. allies, cause some African nations and Russia to strengthen ties with China, and provoke the Chinese and Russians to become more aggressive. The [report](#), released Wednesday, comes from several leading national security figures, including a former head of the Joint Chiefs of Staff, a former director of national intelligence and a former Marine Corps commandant. Despite most Middle Eastern oil going to Asia and projections that show North America may be able to [produce all the oil it consumes](#) by 2020, the report said the U.S. should still not withdraw from its role as global policeman. "It is often suggested that the United States could disengage militarily from volatile oil-producing regions, clearing the way for a larger security role and increased burden-sharing by energy-hungry emerging economies," the report said. Yet oil is a globally traded commodity, so a disruption anywhere will impact the price in the United States, adding that the call to disengage "ignores the potential for wide ranging uncertainty in current forecasts."

[Energy Department Updates Home Energy Scoring Tool for Advancing Residential Energy Performance](#)

[U.S. Dept. of Energy – EERE News, Jan. 9] As part of the Energy Department's commitment to helping families across the U.S. save money by saving energy, the Department announced today its first major software update to the [Home Energy Scoring Tool](#), developed by the Department's [Building Technologies Office](#) and Lawrence Berkeley National Laboratory (LBNL). The Home Energy Score allows homebuyers to compare homes on an "apples to apples" basis and provides recommendations for energy efficiency improvements. In addition, homeowners and homebuyers receive a cost-saving estimate of how these improvements could reduce utility bills and improve a home's score. This provides homebuyers with the opportunity to undertake energy investments when improvements are most likely to take place—at time of purchase or within the first year of owning a home. Through the Home Energy Scoring Tool, more than 8,500 homes have been scored by the Energy Department's growing network of more than 25 partners and 175 qualified assessors. After more than a year of implementation and feedback from program partners, the Energy Department made significant improvements to the scoring tool's calculation methodology and user interface. To inspire greater investments in energy efficiency, the tool also provides more detailed and cost-effective recommendations to help consumers further improve their home's energy efficiency. The updated tool is more sensitive to local climate—collecting data from more than 1,000 weather stations nationwide compared to the 250 stations

used previously. The Energy Department, through LBNL, is working with third-party software companies to license the Home Energy Score application programming interface (API) to build apps and other online resources that exchange data with the tool.

[Shale Plays Will Help the U.S. Produce More Oil than it Consumes, BP Says](#)

[Houston Business Journal, Jan. 16] Benefiting from rising output in the Eagle Ford and other shale plays, the United States will provide for all its own energy by 2035, the oil giant BP PLC said in a new report. Advances in unlocking oil from shale reserves, coupled with slowing demand growth, will allow the U.S. to produce more gas and coal than it consumes, BP said in its Energy Outlook 2035 forecast, released this week. The report "highlights the power of competition and market forces in unlocking technology and innovation to meet the world's energy needs," BP Group CEO Bob Dudley said. "These factors make us optimistic for the world's energy future." Increasing production from domestic shales will help the U.S. next year bypass Saudi Arabia to become the world's largest oil producer, BP projects. U.S. oil imports are expected to drop 75 percent between 2012 and 2035.

[Stalled Coal-Plant Emission Project Wins U.S. Grant](#)

[Bloomberg, Jan. 16] A long-stalled project to capture carbon-dioxide emissions from a coal plant in Illinois will get a \$1 billion grant from the U.S. Department of Energy, which the operator said will allow construction to begin this year. The approval is "a boost to demonstrating fully integrated carbon capture and storage technology at commercial-scale coal-fueled power plant," Ken Humphreys, chief executive of the FutureGen Alliance, said in a statement today. The full cost of the project is \$1.65 billion. The Department of Energy issued its finding on the environmental review. The decision came as Republican senators criticized the U.S. Environmental Protection Agency for proposing to require all new coal plants to install carbon-capture equipment. Technology industry advocates say that gear isn't available yet on a commercial scale. The EPA's proposal sets the stage for the more far-reaching set of final rules governing emissions from existing power plants, due by June. With low-cost natural gas displacing coal in many power facilities, rules on existing plants will take on heightened importance.

INDUSTRIES AND TECHNOLOGIES

[100,000 Electric Cars Sell in 2013, EV Race Hopes to Boost Numbers](#)

[SustainableBusiness.com, Jan. 20] Although most of us still don't see many plug-in vehicles on the roads (except if you live in California), almost 100,000 sold last year in US. But that's nowhere near enough so proponents are launching Formula E, an electric car race where people like Richard Branson and Leonardo DiCaprio will compete for the championship. One-hour races will take place in major cities, including London, Los Angeles and Beijing from September 2014 to June 2015, "We are a championship on a mission, and the mission is to have more electric cars on the streets all around the world," says Alejandro Agag, CEO of Formula E.

[Battery Development May Extend Range of Electric Cars](#)

New anode quadruples life of lithium-sulfur battery, could also help store renewable energy more cheaply

[Pacific Northwest National Lab, Jan. 9] Richland, Wash. – It's known that electric vehicles could travel longer distances before needing to charge and more renewable energy could be saved for a rainy day if lithium-sulfur batteries can just overcome a few technical hurdles. Now, a novel design for a critical part of the battery has been shown to significantly extend the technology's lifespan, bringing it closer to commercial use. A "hybrid" anode developed at the Department of Energy's [Pacific Northwest National Laboratory](#) could quadruple the life of lithium-sulfur batteries. [Nature Communications](#) published a paper today describing the anode's design and performance.

"Lithium-sulfur batteries could one day help us take electric cars on longer drives and store renewable wind energy more cheaply, but some technical challenges have to be overcome first," said PNNL Laboratory Fellow Jun Liu, who is the paper's corresponding

author. "PNNL's new anode design is helping bringing us closer to that day." Today's electric vehicles are commonly powered by rechargeable lithium-ion batteries, which are also being used to store renewable energy. But the chemistry of lithium-ion batteries limits how much energy they can store. One promising solution is the lithium-sulfur battery, which can hold as much as four times more energy per mass than lithium-ion batteries. This would enable electric vehicles to drive longer on a single charge and help store more renewable energy. The down side of lithium-sulfur batteries, however, is they have a much shorter lifespan because they can't be charged as many times as lithium-ion batteries.

[Justifiable Optimism for US CHP](#)

[Cogeneration & On-Site Power Production, Jan. 21] There's a great deal of optimism in the US for a period of growth in the CHP market, particularly for smaller schemes serving commercial and small industrial premises. This is largely due to the low gas prices that have followed the boom in shale production. But, in the land of the free, [CHP](#) developers can also look to support available at both the federal level and within several [US](#) states. [President Obama's](#) 2012 executive order to achieve 40 GW of new CHP capacity by 2020 offers indirect help, via the inelegantly-named US Department of Energy Advanced Manufacturing Office's CHP Deployment Program. This aims to stimulate the creation of investment and jobs in US manufacturing industry, and to increase its energy efficiency. CHP is one particular focus area. The AMO works through a set of regional promotional centres for CHP – these were relaunched last autumn as seven new regional CHP Technical Assistance Partnerships (TAPs). Located in California, Colorado, Illinois, New York, North Carolina, Pennsylvania, and Washington state, these organisations support analyses of market opportunities, offer information on the benefits and applications of CHP, and provide technical assistance to end users considering CHP at their facility. Between 2009 and 2012, the partnerships provided technical support to more than 440 CHP projects.

[New Battery May Transform Storage](#)

[Energy Manager Today, Jan. 15] Harvard scientists and engineers have demonstrated a new type of battery that could make power from renewable energy sources such as wind and solar far more economical and reliable. The battery technology was reported in a paper published in [Nature](#). Under the OPEN 2012 program, the [Harvard team](#) received funding from the U.S. Department of Energy's Advanced Research Projects Agency—Energy (ARPA-E) to develop the innovative grid-scale battery. The paper reports a metal-free flow battery that relies on the electrochemistry of naturally abundant, inexpensive, small organic (carbon-based) molecules called quinones, which are similar to molecules that store energy in plants and animals. Intermittent wind or solar resources are inhibited by the lack of affordable storage technologies that can release power on demand. Flow batteries store energy in chemical fluids contained in external tanks instead of within the battery container itself. The electrochemical conversion hardware through which the fluids are stored and the chemical storage tanks may be independently sized. Thus the amount of energy that can be stored is limited only by the size of the tanks. The design permits larger amounts of energy to be stored at lower cost than with traditional batteries.

[New Data Shows Electric Cars Won't Be A Problem for Utilities](#)

[Green Car Reports, Jan. 21] One of the popular criticisms of electric cars is that, as more of them roam our roads and are charged in garages at night, electrical grids will struggle and fail under the pressure. It's popular because it seems plausible--while we're all used to having electrical goods in our houses, few use quite so much power for quite so long as a charging electric car. As is often the case, it turns out to be a misconception--electric cars are unlikely to trouble electric grids, even as far more of them hit the roads. *Navigant Research* suggests that part of the misconception comes from misunderstanding just how little energy electric cars use--and therefore require when charging. According to the Energy Information Administration's Residential Energy Consumption Survey, the average U.S. household consumed 11,321 kilowatt-hours

(kWh) of electricity in 2009. Using average fuel consumption of 24 mpg, a gasoline vehicle doing 12,000 miles a year is even more energy-intensive--consuming the equivalent of 16,000 kWh. If electric vehicles were that inefficient, they'd more than double a home's energy requirements. Doing that with every household in the country--or even a fraction of the homes--would result in a massive spike in demand. Bad news for the grid.

[Pepco Holdings Completes DOE Smart Grid Program](#)

[Electric Light & Power, Jan. 15] Officials from the U.S. Department of Energy (DOE) and Pepco Holdings Inc. (PHI) gathered this week for a two-day event to acknowledge the funding and successful completion of multiple smart grid programs. The projects were accelerated by Smart Grid Investment Grant funds awarded by the DOE as part of the American Recovery and Reinvestment Act (ARRA). Executives and team members from both organizations saw presentations on the status of projects including advanced metering infrastructure (AMI), direct load control and distribution automation. According to Pepco, customers in New Jersey, Maryland and the District of Columbia are already seeing the benefits of the distribution automation program, which uses newly installed automated switching technology and communication equipment to isolate outages and restore power to customers in the vicinity of an outage almost instantly. Customers in Maryland and the District of Columbia have also benefitted from outage notification capabilities and restoration efficiencies that the advanced meters provide. Customers who participated in the Peak Energy Savings Credit program in the Pepco Maryland service area received over \$3.4 million in bill credits last summer and helped reduce peak load by 2.3 million kWh. The typical residential customer's monthly use is 1,000 kWh. This program was enabled by the grant and with over 60 percent participation, clearly demonstrated customer engagement and acceptance.

[US Grid 'Should Introduce' Active Power Management for Wind](#)

[Wind Power Monthly, Jan. 21] UNITED STATES – The US should implement a system that allows wind power to assist the proper functioning of electricity grids by controlling the active power output being placed into the system, a new report has claimed. The study from the National Renewable Energy Laboratory and the University of Colorado shows that the standard approach of adjusting conventional power output to allow the maximum input from wind, is not the optimal method. This practice is often adopted because of the desire to make the most use of wind's lack of fuel costs. Instead, the "Active Power Controls from Wind Power: Bridging the Gaps" report suggests that wind power can support the power system by adjusting its power output at optimal times to enhance system reliability. Additionally, the study finds that it could often be economically beneficial to provide active power control, and the potential for damaging loads on turbines from providing this control is negligible. Active power control helps balance load with generation at various times, avoiding erroneous power flows, involuntary load shedding, machine damage and the risk of potential blackouts.

LEGISLATION AND REGULATION

[McCarthy Defends EPA Tactics to Tamp Down Power Plant Carbon Pollution](#)

[Power Magazine, Jan. 16] Witnesses from four federal agencies, including Environmental Protection Agency (EPA) Administrator Gina McCarthy, answered pointed questions about the president's June 2013--released Climate Action Plan (CAP) and associated rules at an oversight hearing of the Senate Committee on Environment & Public Works today. Committee Chair Sen. Barbara Boxer (D-Calif.) began the hearing to review President Obama's CAP by pledging to back federal climate change mitigation efforts because "it's a moral obligation, it's good for the economy, and it's good for human health," she said. But ranking member Sen. David Vitter (R-La.) hoped the "long-overdue" hearing would address the CAP—which he called "the biggest regulatory avalanche in human history"—its contentious impact on the economy, and to open a debate to whether or not climate science had been settled. One of the [key tenets of the CAP](#) is to tackle carbon pollution from power plants, the single largest source in the U.S.,

McCarthy said, which is why the EPA re-proposed a March 2012 rule in [September 2013](#) and established the first uniform national limits on carbon pollution from future power plants. The New Source Pollution Standards (NSPS) proposal, [recently published in the Federal Register](#), essentially sets separate national limits for new natural gas-fired turbines and new coal-fired units. New large natural gas-fired turbines would need to emit less than 1,000 pounds of CO₂/MWh while new small natural gas-fired turbines would need to emit less than 1,100 pounds of CO₂/MWh. New coal-fired units would need to emit less than 1,100 pounds of CO₂/MWh.

[New Spending Bill Puts the Brakes on Bulbageddon](#)

A single paragraph in the 1,582-page document provides a glimmer of hope -- or perhaps a stay of execution -- for the incandescent light bulb.

[CNET, Jan. 14] Though no existing efficiency standards would actually be overturned, the clause -- one paragraph out of a 1,582-page document -- would prevent the Department of Energy from implementing or enforcing the phase-out, blocking standards set by the 2007 Energy Independence and Security Act (EISA). Negotiations for the appropriations bill involved leadership from both chambers, meaning that passage seems likely. In their [summary of the bill](#), Republican leaders in the House Appropriations Committee touted the "prohibition on funding for the Administration's onerous 'light bulb' standard." It's worth noting that EISA was actually signed into law by then-President George W. Bush, although President Barack Obama has also championed raising efficiency standards. It's unclear how much of an effect the bill would actually have on the current state of the lighting market. From the perspective of some manufacturers, the transition to new technologies has already been made. According to a spokesperson for the [National Electrical Manufacturers Association](#) (NEMA), "(Our members) have already retooled their operations to accommodate the federal standard. As a result, newer, more efficient bulbs are already on store shelves next to the old bulbs. It's likely that most consumers won't notice that the change has happened."

WESTERN POWER

[California Areas Brace for Water Rationing as Reservoir Levels Fall](#)

Residents in some Northern California communities are being asked to cut back on water consumption. In one area, marijuana growers are among the biggest users.

[Los Angeles Times, Jan. 15] Officials of the small Mendocino County town of Willits looked at their two municipal reservoirs last week, did some calculating and realized they had enough water to last only 100 days. It was time to adopt the toughest rationing measures they could. The 5,000 residents of this former lumber town on the edge of redwood country are now on a crash water diet. A family of four isn't supposed to use more than 150 gallons a day. Outdoor watering, car washing and hosing down pavement are banned. Businesses have been ordered to cut water use 35%. "The more we looked at the data, the more we realized the situation is bleak," Willits City Manager Adrienne Moore said. As the winter progresses with no break from last year's parched conditions, concern is mounting that California may be headed for a replay of the big drought of the late 1980s through the early 1990s, or even worse, 1977. The snow and rain could still come. Only about half the rainy season is over. But if monotonously sunny weather continues to curse the state, the pain of water shortages will spread, albeit unevenly.

[In Parched Southwest, Reclaimed Sewage Water Could Be a Welcome Relief](#)

[NBC News, Jan. 13] After touring a plant that turns sewage into quaffable water in parched and sunny Southern California, visitors are offered a glass of the water to drink. Most get over the "ick factor" and take a sip. That's when the epiphany hits, according to the plant's general manager. "They go, well, this tastes like water," [Michael Markus](#) of the Orange County Water District told NBC News. "And we say it tastes like water because it is water." Today, the district's [Groundwater Replenishment System](#) processes 70 million gallons of treated wastewater into pure, potable water every day, which is enough to meet the needs of about 600,000 people. The water is used to replenish the district's aquifer, thus limiting the need to rely on more expensive and unreliable imported


water from Northern California and the Colorado River. As the U.S. Southwest enters yet another year of severe drought that is already crimping the supply of imported water, such toilet-to-tap projects are becoming a necessary solution to the region's ongoing and worsening water crisis, according to [Dan Cayan](#), a climate scientist and water cycle expert at the Scripps Institution of Oceanography in La Jolla, Calif.


[State's First Utility-Scale Geothermal Plant Heats Up](#)


[Albuquerque Business First, Jan. 15] The state's first geothermal plant doesn't look like a power plant. Really, it's just a bunch of pipes sticking out of the ground, a few giant fans and some radiators. But it will produce enough electricity to power 4,000 to 5,000 homes, using the heat that comes out of the desert. The new plant is the beginning for what Cyrq Energy CEO Nick Goodman hopes to see in New Mexico. The Cyrq Energy Geothermal Plant in Animas opened Wednesday. It's the first utility-scale geothermal plant in New Mexico, officials said. The \$100 million investment will, Goodman said, hopefully pave the way for more geothermal generation in the state. "There's a fairly long history of hot springs in New Mexico, and there are others that have used the same resources we've used," he said. "But this is the first of its kind in New Mexico."


ARIZONA STATE INCENTIVES/POLICIES


ARIZONA COMMERCE AUTHORITY (ACA)


 [Angel Investment Tax Credit Program](#) - The main objective of the Angel Investment program is to expand early stage investments in targeted Arizona small businesses. The program accomplishes this goal by providing tax credits to investors who make capital investment in small businesses certified by the Arizona Commerce Authority (ACA). To view the list of businesses that have been certified under this program please click here. [LEARN MORE](#)


 [Arizona Innovation Accelerator Fund](#) - The Arizona Innovation Accelerator Fund Program is an \$18.2 million loan participation program funded through the U.S. Department of Treasury's SSBCI and managed by the Arizona Commerce Authority. The goal of this program is to stimulate financing to small businesses and manufacturers, in collaboration with private finance partners, to foster business expansion and job creation in Arizona. [LEARN MORE](#)

 [Arizona Innovation Challenge](#) - The Arizona Innovation Challenge is an investment in the minds of talented entrepreneurs in Arizona and around the world. The ACA will award \$1.5 million to the most promising technology ventures that participate in the Challenge (awards may range from \$100,000 to \$250,000). [LEARN MORE](#)


 [AZ Fast Grant](#) - Enables Arizona-based technology companies to initiate the commercialization process. Total funds available for this grant round are \$175,000. Maximum awards of \$5,000 and \$20,000 will enable companies to accomplish one of four scopes of work. [LEARN MORE](#)


 [AZ Step Grant](#) - Grant funding from the U.S. Small Business Administration (SBA) with matching funds contributed by the Arizona Commerce Authority (ACA) offering a number of services and tools to Arizona small businesses as they go global for the first time with sales or enter new, international markets. [LEARN MORE](#)


 [Commercial/Industrial Solar Energy Tax Credit Program](#) - The primary goal of the Commercial/Industrial Solar Energy Tax Credit Program is to stimulate the production and use of solar energy in commercial and industrial applications by subsidizing the initial cost of solar energy devices. The program achieves this goal by providing an Arizona income tax credit for the installation of solar energy devices in Arizona business facilities. [LEARN MORE](#)

 [Healthy Forest](#) - The primary goal of the Healthy Forest Enterprise Incentives


Program is to promote forest health in Arizona. The program achieves this by providing incentives for certified businesses that are primarily engaged in harvesting, processing or transporting of qualifying forest products. [LEARN MORE](#)

 **Job Training Program** offers job-specific reimbursable grants for employers creating new jobs or increasing the skill and wage level of their current employees. Deadline: Year Round. [LEARN MORE](#)


 **Renewable Energy Tax Incentive Program** offers a refundable income tax credit and property tax reduction to companies in solar, wind, geothermal and other renewable energy industries who are expanding or locating a manufacturing or headquarters operation in Arizona. The tax credit is up to 10% of the total qualified investment amount and the property tax benefit can reduce a company's property taxes by up to 75%. Deadline: Year Round. [LEARN MORE](#)

 **Research and Development Tax Credit** is an Arizona income tax credit for increased research and development activities conducted in this state. Starting in 2010, a qualifying company may be eligible to claim a partial refund of its current year excess R&D credit. Applicants may apply at the end of their tax year but prior to filing a tax return with Revenue. [LEARN MORE](#)


Quality Jobs Tax Credit Program - The primary goal of the Quality Jobs Tax Credit program is to encourage business investment and the creation of high-quality employment opportunities in the state. The program accomplishes this goal by providing tax credits to employers creating a minimum number of net new quality jobs and making a minimum capital investment in Arizona. [LEARN MORE](#)


 **Bonds Administered by the Arizona Commerce Authority**


- **Private Activity Bonds (PAB)** - Tax exempt bond financing, for federal purposes, offers an alternative financing mechanism for certain projects. [LEARN MORE](#)
- **Qualified Energy Conservation Bonds (QECB)** - Tax credit bonds are available as an alternative financing mechanism for certain green projects. [LEARN MORE](#)

 **Federal Programs**

- **Small Business Innovation Research (SBIR) Program** - SBIR is a competitive program that encourages small businesses to explore their technological potential, as well as, providing incentive to profit from its commercialization. [LEARN MORE](#)
- **Small Business Technology Transfer (STTR) Program** - STTR is an important small business program that expands funding opportunities to meet the nation's scientific and technological challenges in the 21st century. [LEARN MORE](#)
- **Work Opportunity** - The Work Opportunity Tax Credit (WOTC) is a federal tax credit of up to \$9,000 that Congress provides to private-sector businesses for hiring individuals from nine target groups who have consistently faced significant barriers to employment. [LEARN MORE](#)

 **Pollution Control Tax Credit** - Provides a 10 percent income tax credit on the purchase price of real or personal property used to control or prevent pollution.


 **Renewable Energy Production Tax Credit** - An income tax credit awarded to utility-scale generation systems based on the amount of electricity produced annually for a 10-year period using solar or wind energy. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

 **Sales Tax Exemption for Machinery and Equipment**

Exemptions are available for:

1. Machinery or equipment used directly in manufacturing, see [ARS 42-5159\(B\)\(1\)](#).
2. Machinery, equipment or transmission lines used directly in producing or transmitting electrical power, but not including distribution, see [ARS 42-5159\(B\)\(4\)](#).
3. Machinery or equipment used in research and development, see [ARS 42-5159\(B\) \(14\)](#).

Questions can be directed to Christie Comanita (602-716-6791).

 **Solar Liquid Fuel Tax Credit** - Income tax credits are available for research and development, production and delivery system costs associated with solar liquid fuel. Questions can be directed to Georganna Meyer (602-716-6927) or Elaine Smith (602-716-6924).

 **Database of State Incentives for Renewables and Efficiency (DSIRE)**

- [Arizona Incentives/Policies](#)
- [Federal Incentives/Policies](#)
- [Solar Policy News](#) - DSIRE provides summaries of current solar policy developments and an archive of past solar policy developments. Current solar news appears below the news archive, which is searchable by several criteria.

GRANTS

The Following Solicitations Are Now Available:
(Click On Title To View Solicitation)

- [Energy Frontier Research Centers – Response due January 9, 2014](#)
- [Research and Development for Hydrogen Storage – Response due January 17, 2014](#)
- [Technical Assistance and Training Grant Utilities Programs - Response due January 31, 2014](#)
- [Solid Waste Management Grant Program Utilities Programs - Response due January 31, 2014](#)
- [Environmental Education Model Grants - Response due February 4, 2014](#)
- [SBIR/STTR FY 2014 Phase 1 Release 2 - Response due February 4, 2014](#)
- [Environmental Workforce Development and Job Training Grants - Response due February 13, 2014](#)
- [Certification and Rating of Attachments for Fenestration Technologies \(CRAFT\) - Response due February 15, 2014](#)
- [Assisting Federal Facilities with Energy Conservation Technologies - Response due February 18, 2014](#)
- [Energy for Sustainability - Response due February 20, 2014](#)
- [Environmental Health and Safety of Nanotechnology - Response due February 20, 2014](#)
- [Particulate and Multiphase Processes- Response due February 20, 2014](#)
- [Thermal Transport Processes - Response due February 20, 2014](#)

- Value Added Producer Grant - Response due February 24, 2014
- Plant Feedstock Genomics for Bioenergy: A Joint - Response due February 25, 2014
- **NEW!** Vehicle Technologies Incubator – Response due February 28, 2014
- Next Generation Photovoltaic Technologies 3 - Response due March 3, 2014
- Sunshot Incubator Program Round 9 - Response due March 13, 2014
- **NEW!** National Incubator Initiative for Clean Energy (NIICE) – Response due March 21, 2014
- **NEW!** Next Generation Photovoltaic Technologies III – Response due March 24, 2014
- Advanced Fossil Energy Projects - Solicitation Number: DE-SOL-0006303 - Expiration Date 11/30/2016
- Sunshot "Race to the Roof" Initiative - Registration due October 31, 2014
- Repowering Assistance Program – Ongoing
- Rural Business Enterprise Grants– Ongoing
- Rural Business Opportunity Grants– Ongoing
- Sustainable Agriculture Research and Education Grants – Ongoing
- Renewable Energy RFP's - Solicitations for Renewable Energy Generation, Renewable Energy Certificates, and Green Power – Various Deadlines
- U.S. Dept. of Agriculture - Rural Development Grant Assistance

ENERGY-RELATED EVENTS

2014

- ✚ 2014 Open Space Initiative Workshop – Building Partnerships for Economic Development & Open Space in Pinal County
January 30, 2014 Apache Junction, AZ
- ✚ Energy, Utility & Environment Conference
February 3-5, 2014 Phoenix, AZ
- ✚ Solar Power Generation USA Congress 2014
February 4-5, 2014 San Diego, CA
- ✚ 2014 Energy Outlook Conference
February 4-7, 2014 Washington, DC
- ✚ **NEW!** Tribal Telecom 2014
February 10-12, 2014 Phoenix, AZ
- ✚ Sustainability Solutions Festival
February 17-22, 2014 Phoenix, AZ
- ✚ Arizona Solar Summit IV
February 20, 2014 Phoenix, AZ
- ✚ Green Biz Forum 2014

February 18-20, 2014 Phoenix, AZ

✚ **NEW! Southwest Economic Summit**
February 24, 2014 Phoenix, AZ

✚ **NEW! Sustaining the Reservation: Creating Tribal Economies**
February 27-28, 2014 Tempe, AZ

✚ **NEW! NARUC – Current Issues**
March 9-12, 2013 Santa Fe, NM

✚ **Clean Tech Future Conference III**
April 9, 2014 Phoenix, AZ

✚ **International Geothermal Energy Forum**
April 23-24, 2014 Washington, DC

✚ **NEW! 11th Annual Construction in Indian Country Nat'l, Conference**
April 28-30, 2014 Chandler, AZ

✚ **NEW! VerdeXchange Arizona**
April 30-May, 2, 2014 Phoenix, AZ

✚ **NEW! AWEA WindPower 2014**
May 5-8, 2014 Las Vegas, NV

✚ **NEW! Beyond the Border: Arizona Trade Mission to Mexico City & Guadalajara**
May 12-16, 2014

✚ **SunShot Grand Challenge Summit 2014**
May 19-22, 2014 Anaheim, CA

✚ **Native American Economic Development & Energy Projects Conference**
June 16-17, 2014 Anaheim, CA

✚ **32nd Annual West Coast Energy Management Congress**
June 25-26, 2014 Seattle, WA

✚ **National Geothermal Summit**
August 5-6, 2014 Reno, NV

✚ **Geothermal Energy Expo**
September 28-October 1, 2014 Portland, OR

✚ **ASU Sustainability Series Events**

✚ **Green Building Lecture Series**
Granite Reef Senior Center Scottsdale, AZ